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 CIBA GEIGY CORP 12 \*US 4558-145-A  
 21.10.83-US-544296 (10. 10/85) C071-15/2  
 Ferric N-(2-hydroxyethyl) ethylene:di:amine tri acetic acid prepn. -  
 by reacting iron powder with nitric acid and hydroxy-EDTA, oxidising  
 and adjusting pH  
 C86-003073

C(5-A3A, 10-B1B, 12-N9) 3

The process has the advantage of increased yields of (1) over prior art methods of prepn.

#### REACTION CONDITIONS

The iron powder is pref. of 60 mesh and added portion-wise keeping the temp. below 70°C. The oxidn. of the ferrous complex to ferric is carried out by bubbling through air or oxygen with stirring.

#### EXAMPLE

70% HNO<sub>3</sub> (252 g) was added to a 44.8% soln. of trisodium HO-EDTA (470 mg) to adjust the pH to 1.2 and then iron powder (40 mesh) (54.7 g) was added over a 2 hr. period to give a green aq. chelate soln. Further trisodium HO-EDTA was added and then air bubbled through at 90°C. After 2.5 hr., the colour of the soln. changed to red and the pH was adjusted to 5.2 - 5.8 with HNO<sub>3</sub> to give the ferric chelate. (4pp 916HDDwgNo.0/0).

#### Prepn. of ferric OH-EDTA complex (1) comprises

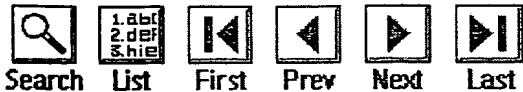
- (1) adding nitric acid to an aq. soln. of 2/3 rd the stoichiometric equiv. of trisodium N-(2-hydroxyethyl)-ethylenediaminetriacetic acid based on Fe to adjust the pH to 1.0 to 1.4;
- (2) adding powdered iron at below 70°C to form a ferrous chelate;
- (3) adding trisodium N-(2-hydroxyethyl)ethylenediamine-triacetic acid to complete the stoichiometric requirement therefor;
- (4) contacting the resulting chelate with an oxygen source at 50-90°C to convert the ferrous chelate to ferric chelate;
- (5) adjusting the pH of the soln. to 5.0 to 6.0 to give a soln. contg. < 1% free OH-EDTA and 5.0 - 5.5 wt. % Fe in chelated form.

#### USE/ADVANTAGE

The chelates are used to correct iron deficiencies in soils.

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**Title:** PREPARATION OF FE CHELATES

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**Publication Date:** 19851210

**IPC:** C07F01502

**National Classification:** 556148

**Inventor(s):** SMITH; NELSON; STUTTS; JOSEPH W.

**Applicant(s):** CIBA GEIGY CORPORATION

**Priority:** US 83 544296 831021 A

**Legal Status:**

Date	+/-	Code	Description
19831021		AE	APPLICATION DATA (PATENT) US 1983 544296 A 19831021
19850925		AS02	ASSIGNMENT OF ASSIGNOR'S INTEREST CIBA-GEIGY CORPORATION, 444 SAW MILL RIVER ROAD, ARDSLEY, NEW YORK, A CORP. OF N * SMITH, NELSON : 19831013; STUTTS, JOSEPH W. : 19831013
19851210		A	PATENT
19900227	(-)	FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE 891210

